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5350 South Staples Street, Suite 425, Corpus Christi, Texas 78411

Addendum No.1

Date: June 20, 2025
Project: City of South Padre Island Marisol (Laguna Madre) Boat Ramp Construction
ITB 2025-SL01
LJA Project No. C275-21184

Prospective bidders are hereby notified of the following modifications to the contract documents. These modifications shall become a part of the contract documents. The provisions of the contract documents not specifically affected by the addendum shall remain unchanged.

I. CLARIFICATIONS

A. Question 1: What amount per day will be assessed for liquidated damages?

Answer 1: **Liquidated damages will be $500.00 per day for each and every calendar day that the Contractor shall be in default after the time stipulated for final completion of the project. This amount will be entered into item 23 LIQUIDATED DAMAGES, 23.02, before execution of the Standard Form of Agreement between the City of SPI and the successful bidder.**

B. Question 2: Can the project budget or engineer's estimate be disclosed?

Answer 2: **The City of South Padre Island reserves the right to disclose the budget or engineer's estimate.**

C. Question 3: How are construction operations supposed to be handled between this project and ongoing construction from the adjacent property to the west? Is there parking for Contractor's vehicles/equipment?

Answer 3: **The property line between the project site and the adjacent property to the west are clearly shown on sheet C1 of the construction plans. It is expected for construction operations currently taking place on the adjacent property to the west to be finished by the time construction begins on this project. The successful bidder is expected to interact with the adjacent property owner to a level as a professional courtesy during construction. The City of South Padre Island will be able to coordinate additional communications/interactions as needed.**

D. Question 4: Is U.S. Coast Guard coordination required?

Answer 4: **No. Coordination with the U.S. Coast Guard will not be required as part of this project.**

E. Question 5: Are divers required?

Answer 5: **It is not anticipated that divers would be required. As usual in this industry, the means and methods for construction will be the sole responsibility of the successful bidder.**

F. Question 6: Does this project need to abide by Build America, Buy America (BABA) requirements?

Answer 6: **Although highly encouraged, infrastructure projects selected after May 14, 2022, will be subject to the Buy American Preference requirements, unless a different applicable waiver is in effect at that time. This being a Tourism project which was selected by May 14, 2022, the waiver remains in place. Please see item A5a, page 7, of the Restore Act document found as part of the ITB 2025-SL01 for more information.**

G. Question 7: Is form 1295 required with the bid packet or afterwards?

Answer 7: **Per ITB 2025-SL01, Instruction to Bidders, item T. DISCLOSURE OF INTERESTED PARTIES, form 1295 will require submission from the successful bidder during the signing of the contract.**

H. Question 8: In the electrical plans how do we connect power to the water channel side? Do we use the underground utilities? Are they already there or do we have to provide them? Please clarify.

Answer 8: **Currently, there are no utilities at the site, all will have to be provided as part of this contract. Sheet E1 shows a home run to panel LP-2,4 on the south side of the site, connecting all the south side poles to power.**

I. Question 9: In the dock and fish cleaning station plans none of the hardware is detailed other than "All hardware to be Stainless Steel". What are the sizes of the bolts, washers, lock washers? Galvanized or Stainless Steel?

Answer 9: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

J. Question 10: Do substitutions for discontinued items need to be submitted in writing? Or replaced with comparable items?

Answer 10: **Yes. Any and all items which have been discontinued or otherwise being presented by a Contractor as an approved equal will need to be submitted in writing to the Engineer during the submittal review process or during construction, preferably via email. Contact information from all parties involved in the project shall be made available during the pre-construction meeting.**

K. Question 11: For the dock, is it the intention to have 3 stringers in the front, 1 in the middle, and 2 in the rear?

Answer 11: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

L. Question 12: For the fish cleaning station hurricane ties are mentioned in the notes but are not shown in the plans or details. Do you want to use joist hangers, or hurricane ties, or both?

Answer 12: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

M. Question 13: Will the tie back dead man require reinforcement? The dead man appears to be deep. Please clarify.

Answer 13: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

N. Question 14: The ADA ramp and pavers appear to conflict with the tieback rods for the boat ramp bulkhead. Please provide details and clarify

Answer 14: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

O. Question 15: Would you be able to provide a connection detail for the new to existing seawall bulkhead?

Answer 15: **A connection detail from existing to proposed bulkhead cap is not required. A cold joint is expected at the connection point after exploratory excavation finds the nearest existing tie-back where the proposed cut will be done.**

P. Question 16: Bid item A8 mentions the USACE permit no. SWG-2022-00301. Can a copy of the permit be provided?

Answer 16: **Yes. A copy of USACE permit no. SWG-2022-00301 is attached as part of this addendum as Attachment 'C'.**

Q. Question 17: Looking at sheet C1 of the plans, it shows the existing retaining wall bulkhead needs to be cut past the limits of the cofferdam. Please clarify if the cofferdam limits need to be extended to include the whole bulkhead to be cut or if the bulkhead does not need to be cut past the cofferdam limits.

Answer 17: **The limits of the cofferdam will remain as shown in sheet C1 as the intention is to allow for construction of the boat ramp. The cut past the limits of the cofferdam is intended to show the demolition of the existing concrete bulkhead cap only to allow for construction of the proposed ADA ramp, not requiring any demolition to the bulkhead itself.**

R. Question 18: Could you please confirm which roofing material is required for the fish cleaning station roof, or if there is a preferred option we should proceed with?

Answer 18: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

S. Question 19: Plan sheet C9 depicts a ribbon curb adjacent to the brick pavers, there is no pay items for this work. If a ribbon curb is required, please provide details of the locations and a pay item for this work.

Answer 19: ***This question will be answered in a follow-up addendum on Monday, June 23, 2025, by 5 pm.***

T. Question 20: Please provide the geotechnical report referenced on plan sheet G1.

Answer 20: **A copy of the geotechnical report for this project is attached as part of this addendum as Attachment 'B'.**

II. MODIFICATIONS TO THE BIDDING REQUIREMENTS

A. General & Special Conditions of Agreement

DELETE: General & Special Conditions of Agreement in its entirety.

ADD: General & Special Conditions of Agreement in its entirety (Attachment 'A').

II. ATTACHMENTS

1. General & Special Conditions of Agreement (Attachment 'A')
2. Geotechnical Report (Attachment 'B')
3. U.S. Army Corps of Engineers (USACE) Permit No. SWG-2022-00301 (Attachment 'C')

Please acknowledge receipt of this addendum in the appropriate place in your PROPOSAL FORM.

End of Addendum No. 1

Yesenia Singleton, PE
Project Engineer

A. GENERAL CONDITIONS OF AGREEMENT

The Standard Form of Agreement between Owner and Contractor shall be governing conditions of this contract.

1. STANDARD SPECIFICATIONS FOR CONSTRUCTION--CITY OF SOUTH PADRE ISLAND

a. FACILITIES: All building construction and related installations shall conform to the City's latest adopted editions of the 2018 International Building Code, 2018 International Residential Code without Section R313 (deleted), 2018 International Fire Code without Appendices L and M (deleted), 2018 International Mechanical Code, 2015 International Plumbing Code, 2015 International Fuel Gas Code, 2014 National Electrical Code, 2018 International Energy Conservation Code, 1997 Standard Housing Code, and the 1985 Unsafe Building Abatement Code and all other amendments thereto except as modified by the Code of Ordinances. All other City of South Padre codes and ordinances shall also apply.

b. CIVIL CONSTRUCTION: These specifications shall be used in conjunction with the City of South Padre Island's Standard Specifications of Water and Sewer Construction and Street Construction and is hereby incorporated by reference and those specifically provided for in Chapter 23 of the Code of Ordinances, City of South Padre Island. All City of South Padre codes and ordinances shall apply.

Any discrepancies between the City standards and these specifications shall be clarified per the instructions in Paragraph G, "QUESTIONS AND INQUIRIES," in the Instructions to Bidders section.

B. SPECIAL CONDITIONS OF AGREEMENT

1. MEASUREMENTS: All work not specifically set forth as a pay item in the Proposal shall be considered a subsidiary obligation of the Contractor, and all costs in connection therewith shall be included in the various unit prices listed in the Proposal.

2. QUANTITIES: Where unit quantities are shown on each bid item of the Proposal, they shall be construed to represent approximate quantities of Work to be completed. Final quantities will be determined by measurement on the site of the completed Work. Work performed outside of specified limits will not be included in final measurement. Bidders are hereby notified that no incidental items of the Work will be paid for unless it is listed in the Proposal form as a pay item.

3. EXPLOSION, COLLAPSE, AND UNDERGROUND HAZARDS (XCU): Contracts, where trenching depths exceed twelve (12) feet, shall require additional coverage for the following General Liability hazards:

Explosion	Applies to blasting operations
Collapse	Applies to excavation and grading work adjacent to structure
Underground	Applies to excavation, burrowing, trenching, tunneling, etc. For example, severing an electrical line during excavation operations.

An additional premium may be assessed by contractor's insurance provider. Successful contractor is responsible for assessing depth based on plans and specifications contained herein.

4. TRAFFIC CONTROL. When work is performed in or immediately adjacent to a public street right-of-way, the Contractor shall submit to the City Engineer a traffic control plan for each public right-of-way he enters prior to the pre-construction meeting. This plan shall be in conformance to the Texas Manual on Uniform Traffic Control Devices. Once reviewed, the plans will be returned to the Contractor with comments.

   Approved Traffic Control Plans shall be in the possession of the contractor on-site during all work within the designated right of way.

5. MATERIAL STAGING. Contractor is responsible for identifying and securing a suitable site for the storage of materials and other construction related items unless such a site is specifically identified in the plans.

6. PERMITS. Contractor will be required to get permits pursuant to contract documents; however, the City will waive the fees.

7. STORMWATER PERMIT. For construction areas disturbing more than one (1) acre of land, Contractor shall provide a Storm Water Pollution Prevention Plan and all related inspections, rain gages, signage, subsidiary to the contract.

8. SURVEY. The Owner will provide a one-time survey staking of key construction points, bench marks, horizontal controls, building corners, or utility appurtenances as deemed necessary by the City Engineer. Additional construction staking, or replacement staking, will be at the contractor's expense.

9. CONTRACTOR PARKING and BATHROOMS. Unless noted otherwise in the bid documents and plans, the installation of temporary bathroom facilities on the site will not be allowed. Parking for construction related vehicles, worker vehicles, and other equipment may be limited at the construction site. The Contractor should anticipate the need to provide for off-site parking subsidiary to the bid price in the contract.

10. FIELD OFFICES. The Contractor will not be required to maintain a field office at the construction site. In the event that the Contractor wishes to have a temporary project office, approval will be required by the Owner. The cost for the installation of all utilities will be paid by the Contractor.

11. DRAINAGE AND EROSION CONTROLS. The contractor will be responsible for designing, installing and maintaining interim drainage and erosion controls for the construction site. Surface drainage channels, culverts, or other features will be maintained by the contractor in such a way to minimize the impacts from storm water to offsite properties.

12. CONTRACT FORMS, BONDS, AND CERTIFICATES. The Standard Form of Agreement bond forms listed below will be made a part of the executed contract documents and are made a part of these specifications:

    a. PERFORMANCE BOND

    b. PAYMENT BOND

    These forms are not to be filled in by the bidder at the time of submitting his proposal.

13. FEDERAL COMPLIMENT. Bidders will be required to comply with the following items:
    a. President Executive Order Numbers 11246 and 11375 which prohibit discrimination in employment regarding race, creed, color, sex, or national origin.

b. Title VI of the Civil Rights Act of 1964 which prohibits discrimination on the basis of race, color, or national origin.
c. Davis Bacon Act, the Anti-Kickback Act, and the Contract Work Hours Standard Act regarding labor standards for federally assisted construction subagreements.
d. Bidder must make positive efforts to utilize small and minority owned businesses and women business enterprises.
e. If selected, the Contractor will need to register on SAM.gov and provide their Unique Entity Identifier (UEI) to the City.

Boat Ramp and Parking Lot

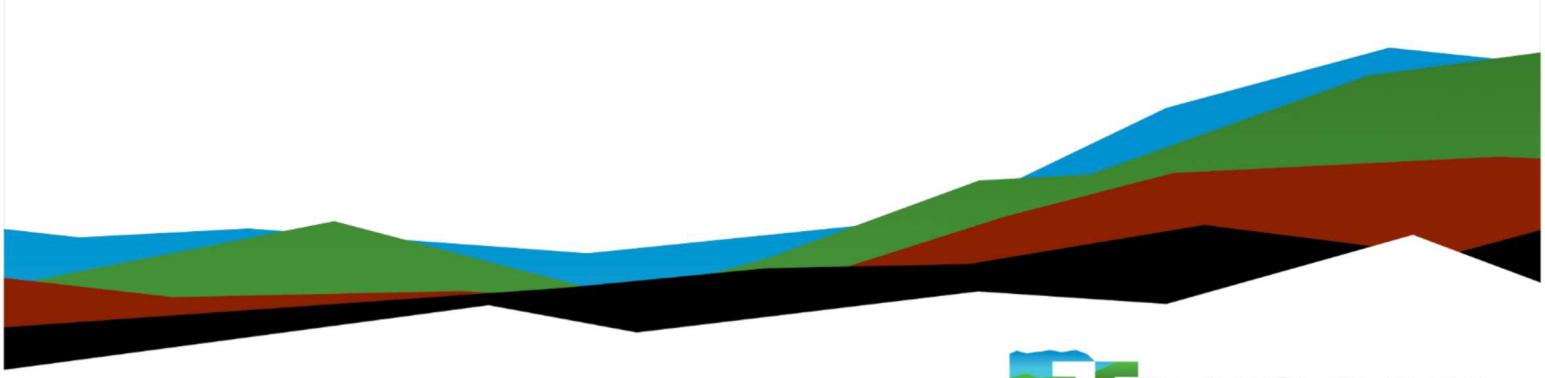
Geotechnical Engineering Report - Updated

June 18, 2024 | Terracon Project No. 88225026A

South Padre Island, Texas

Prepared for:

LJA Engineering, Inc.
5350 S. Staples, Suite 425
Corpus Christi, Texas 78411



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Terracon
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June 18, 2024

LJA Engineering, Inc.
5350 S. Staples, Suite 425
Corpus Christi, Texas 78411

Attn: Mr. Jeff Coym, P.E., M. ASCE
P: (361) 991 8550
E: jcoym@lja.com

Re: Geotechnical Engineering Report - Updated
Boat Ramp and Parking Lot
200 W. Marisol Street
South Padre Island, Texas
Terracon Project No. 88225026A

Dear Mr. Coym:

We have completed the scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. P88225026 dated February 10, 2022 and MSA Task Order dated April 18, 2024. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork, the design and construction of foundations and pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon
(Texas Firm Registration No. F-3272)

Martin Reyes

Martin Reyes
Group Manager

STATE OF TEXAS
ALFONSO A. SOTO
94153
LICENSED
PROFESSIONAL ENGINEER
06/18/2024

Alfonso Soto

Alfonso A. Soto, P.E., BC.GE., F. ASCE
Senior Principal

ATTACHMENT 'B'
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Figures

GeoModel

Attachments

Exploration and Testing Procedures
Site Location and Exploration Plans
Exploration and Laboratory Results
Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the Terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**.

Refer to each individual Attachment for a listing of contents.

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Report Summary

Topic [1]	Overview Statement [2]
Project Description	The new development may include the design and construction of a boat ramp, a parking lot area and lighting pole installation.
Geotechnical Characterization	The subsurface soils at this site generally consist of Lean Clay (CL) and Silty Sand (SM). Groundwater was observed in borings B-1, B-4, B-6, B-7, and B-8, at depths ranging between 11 and 16 feet below existing grade (beg) during drilling and after a 15-minute wait period.
Foundations	A shallow and deep foundation system would be appropriate to support the structural loads of the proposed structures and lighting pole system, provided the site and foundation are designed and constructed as recommended in this report.
Below-Grade Structures	Bulkheading walls may be designed and constructed near the boat ramp area at selected locations.
Pavements	Rigid pavement systems are considered for this project. We anticipate traffic may consist of typical small / midsize vehicles, and occasional garbage trucks.
Earthwork	Existing soils can be used for general fill.
General Comments	This section contains important information about the limitations of this geotechnical engineering report.

1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.
2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

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Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed Boat Ramp and Parking Lot project to be located at 200 W. Marisol Street in South Padre Island, Texas.

Terracon performed a subsurface exploration for the project and presented the results in the geotechnical engineering report No. 88225026 dated March 28, 2022. The previous report has been updated to verify existing conditions of dredged fill material stockpiled on the proposed parking areas. All recommendations in this report will supersede the previous recommendations.

The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Demolition considerations
- Excavation considerations
- Foundation design and construction
- Lateral earth pressures
- Pavement design and construction
- Dewatering considerations
- Frost considerations

The geotechnical engineering Scope of Services for this project included the advancement of test borings, laboratory testing, engineering analysis, and preparation of this report.

Drawings showing the site and boring locations are shown on the **Site Location** and **Exploration Plan**, respectively. The results of the laboratory testing performed on soil samples obtained from the site during our field exploration are included on the boring logs in the **Exploration Results** section.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	Ms. Yesenia Singleton, P.E. with LJA on February 9, 2022 and Mr. Manuel Guerra III, EIT with LJA on April 16, 2024.
Project Description	The new development may include the design and construction of a boat ramp, a parking lot area and lighting pole installation.

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Item	Description
Construction Type	We understand that the proposed pavements and the boat ramp will consist of a rigid pavement section.
Lighting Pole Foundation Type	We anticipate that the new lighting pole structures may be supported by a deep foundation system.
Maximum Lighting Pole Loads (assumed)	Light poles: 0.5 to 1.5 kips
Grading/Slopes	Up to 4 feet of cut and 1 foot of fill may be required to develop final grade.
Pavements	The pavements will likely consist of rigid sections underlain by treated or untreated granular base material with treated or untreated subgrade.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading limits, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project site is located at 200 W. Marisol Street in South Padre Island, Texas. Approx. GPS coordinates of boring B-1: Latitude: 26.096610° N Longitude: 97.167898° W. See **Site Location**
Existing Improvements	Undeveloped land
Current Ground Cover	Native grass, bare soils and dredged material
Existing Topography	Relatively flat and level

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Geotechnical Characterization

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration and Laboratory Results** and the GeoModel can be found in the **Figures** attachment of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Clay**	Fill: Lean Clay CL) / Lean Clay (CL); medium stiff to stiff
2	**Sand**	Fill: Clayey Sand (SC) / Clayey Sand (SC) / Silty Sand (SM) / Poorly Graded Sand with Silt (SP-SM) / Poorly Graded Sand (SP); very loose to medium dense

Groundwater Conditions

The borings were advanced in the dry using a dry augered drilling technique that allow short term groundwater observations to be made while drilling. Groundwater seepage was encountered at the time of our field exploration.

The borings were observed during and after completion of drilling for the presence and level of groundwater. The water levels observed are noted on the attached boring logs and are summarized below.

Boring Number	Approximate Depth to Groundwater, feet [1]	
	While Drilling	After a 15-Minute Wait Period
B-1	5	4
B-2	5½	5
B-3	6	5½
B-4	7½	7
B-5	7½	7

1. Below ground surface

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Groundwater conditions may be different at the time of construction. Groundwater conditions may change because of seasonal variations in rainfall, runoff, and other conditions not apparent at the time of drilling. Long-term groundwater monitoring was outside the scope of services for this project. The boreholes were backfilled with on-site soil cuttings after completion of the groundwater level observations.

The sand and silt strata are considered volumetrically stable and due to their granular nature may transmit water easily during high sea level and rainfall periods. Groundwater conditions may be different at the time of construction. Groundwater conditions may change because of seasonal variations in rainfall, runoff, and other conditions not apparent at the time of drilling. Long-term groundwater monitoring was outside the scope of services for this project. The boreholes were backfilled with on-site soil cuttings after completion of the groundwater level observations.

Geology

The Geologic Atlas of Texas (1976), McAllen - Brownsville Sheet has mapped the Barrier Ridge and Barrier Flat Deposits (Qbr) of the Holocene (Recent) Period of the Quaternary age at or near this site. The Barrier Ridge and Barrier Flat Deposits (Qbr) is composed of sand, silt and clays, but mostly sand, described as well sorted and fine grained with abundant shells and shell fragments. The sand is interfingered with silt and clay in landward direction. The deposits include beach, ridge spit, tidal channel, tidal delta, wash over fan and some dune deposits. Soils are of high to very high permeability, low water holding capacity, low compressibility, low shrink-swell potential, good drainage, high shear strength and low plasticity.

Seismic Site Class

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Class is required to determine the Seismic Design Category for a structure. The Site Class is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC). Based on the soil properties observed at the site and as described on the exploration logs and results, our professional opinion is for that a **Seismic Site Class of E** be considered for the project. Subsurface explorations at this site were extended to a maximum depth of 25 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

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Geotechnical Overview

The near surface, medium stiff lean clay could become unstable with typical earthwork and construction traffic especially after precipitation events. An effective drainage should be completed early in the construction sequence and maintained after construction to avoid potential issues. If possible, the grading may be performed during the warmer and drier times of the year. If grading is performed during the rainfall months, an increased risk for possible undercutting and replacement of unstable subgrade may persist. Additional site preparation recommendations, including subgrade improvement and fill placement, are provided in the **Earthwork** section.

The soils which form the bearing stratum for shallow foundations are plastic and exhibit low to moderate potential for shrink-swell movements with changes in moisture. The **Shallow Foundations** section addresses support of the ramp wall bearing on native medium stiff on-site soils.

A rigid pavement system is recommended for the boat ramp. The **Pavements** section addresses the design of pavement systems.

As stated, groundwater was observed in the test borings and will likely be encountered in utility trenches or cut areas during construction operations. Given the potential for seepage conditions, a drain system should be incorporated at strategic locations during or after construction. Provisions should be made to incorporate appropriate surface or subsurface drain systems and direct it off the site. The recommendations contained in this report are based upon the results of data presented herein, engineering analyses and our current understanding of the proposed project.

Our opinion of pavement section thickness design has been developed based on our understanding of the intended use, traffic loads, and subgrade preparation recommended herein using methodology contained in ACI 330 "Guide to Design and Construction of Concrete Parking Lots" and adjusted with consideration to local/TxDOT design manuals. The **Pavements** section includes minimum pavement component thickness. The **Pavements** section includes our recommended parameters for subgrade support for surfacing design by others.

The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the **Exploration and Laboratory Results**), engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations.

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Earthwork

Earthwork is anticipated to include clearing and grubbing, excavations, and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations and pavements.

Site Preparation

Construction areas should be stripped of all vegetation, topsoil, organic soils and other unsuitable material. Additional excavation as recommended in this report or as needed should be performed within the proposed construction area.

Once final subgrade elevations have been achieved, the exposed pavement subgrade should be carefully proofrolled with a 15-ton pneumatic roller or a fully loaded dump truck to detect weak zones in the subgrade. Special care should be exercised when proofrolling the fill soils to detect soft/weak areas. Weak areas observed in the proposed pavement areas may be replaced with clean on-site soils or select fill. Proper site drainage should be maintained during construction so that ponding of surface runoff does not occur and causes construction delays or inhibit site access.

After proofrolling, and just prior to placement of fill, the exposed pavement subgrade should be evaluated for moisture and density. If the moisture, density or the requirements do not meet the criteria described in the table below, the subgrade should be scarified to a minimum depth of 8 inches, moisture adjusted and compacted to at least 95 percent of the Standard Effort (ASTM D 698) maximum dry density.

Boat Ramp Area

At the new bulkheading for boat ramp, after the site has been over-excavated to the required depth below existing grade, soft and weak subgrade conditions will likely be present. We have provided the following subgrade preparation that is intended to establish a working platform and allow proper construction of the subbase or bearing elevation.

- Dewater the working or affected areas, as needed.

- Place oversize rocks or "chunks" of crushed concrete in the exposed subgrade. The oversize rock/crushed concrete should be measuring about 6 inches to 18 inches in diameter or greater and should be pressed into the weak subgrade soils with the appropriate equipment until a firm working platform is created. The subgrade preparation should be designed and extended a minimum of 5 feet beyond the edge of the proposed alignment on each side or as needed to improve subgrade conditions and construct the subbase. In addition, if the area is to be excavated

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later the size of the rock or "chunks" of crushed concrete should be considered with respect to future excavation difficulties.

- If applicable, place geogrid (TX-5 or equivalent). The geogrid should extend at least 3 to 5 feet horizontally measured beyond the edge of the proposed alignment on each side to improve subgrade conditions and construct the subbase. The granular base material should be placed as recommended in the **Pavements** section of this report.

Existing Fill

Fill soils (dredged material) were encountered in Boring B-4 and B-5 between depths of 2 and 3 feet. The fill soils are relatively loose and medium stiff. At in-situ moisture content and density, these existing fill soils are compressible under loading imposed by placement of additional engineered fill or foundations. Given the present condition of these materials, moisture conditioning, and compaction is recommended.

Existing fill encountered consists predominately of clayey sand and lean clay soils. It is our opinion that these soils may be suitable for use as engineered fill, provided oversized and deleterious materials are removed. The fill can be considered for use in engineered fill provided the materials are properly processed as outlined in this report.

Excavation

We anticipate that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 3 feet of structure. General fill is material used to achieve grade outside of these areas.

Reuse of On-Site Soil: Excavated on-site soil may be suitable for reuse as general fill.

Material property requirements for on-site soil for use as general fill and structural fill are noted in the table below:

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Property	General Fill	Structural Fill
Composition	Free of deleterious material	Free of deleterious material
Maximum particle size	6 inches (or 2/3 of the lift thickness)	2 inches
Fines content	Not limited	Less than 85% Passing No. 200 sieve
Plasticity	Not limited	Plasticity Index (PI) between 7 and 20
GeoModel Layer Expected to be Suitable[1]	1 and 2	---

1. Based on subsurface exploration. Actual material suitability should be determined in the field at time of construction.

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade, if applicable.

Soil Type [1, 2, 3]	USCS Classification	Acceptable Parameters (for Structural Fill)
Low Plasticity Cohesive	CL and/or SC	Liquid Limit less than 40 Plasticity Index (PI) between 7 and 20 Less than 85% Passing No. 200 sieve
Granular	SC, GC, Caliche, Crushed Limestone and Crushed Concrete	Less than 50% passing No. 200 sieve
Flowable Fill	---	Confined areas and backfill for utility trenches

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Soil Type [1, 2, 3]	USCS Classification	Acceptable Parameters (for Structural Fill)

1. Structural and general fill should consist of approved materials free of organic matter and debris. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site. Additional geotechnical consultation should be provided prior to use of uniformly graded gravel on the site.
2. Crushed limestone and crushed concrete material should meet the requirements of 2014 TxDOT Item 247, Type A, or D, Grade 1-2 or 3. The structural fill materials should be free of organic material and debris and should not contain stones larger than 2 inches in the maximum dimension. The clayey gravel and caliche materials should meet the gradation requirements of Item 247, Type B, Grade 1-2 or 3 as specified in the 2014 TxDOT Standard Specifications Manual and a Plasticity Index between 7 and 20.
3. Flowable fill should have a 28-day strength between 80 and 200 psi and meet the requirements for 2014 TXDOT Item 401. Although usually more costly, flowable fill does not require placement in lifts or mechanical compaction.

Fill Placement and Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness	8 inches in loose thickness when heavy, self-propelled compaction equipment is used. 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used.	Same as structural fill
Minimum Compaction Requirements [1,2,3]	95% of MDD below foundations and within 1 foot of finished building or pavement subgrade. 95% of MDD above foundations, below floor slabs, and more than 1 foot below finished building or pavement subgrade	92% of max.
Water Content Range [1]	Low plasticity cohesive: -2% to +2% of optimum High plasticity cohesive: 0 to +4% of optimum Granular: -2% to +2% of optimum	As required to achieve minimum compaction requirements

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Item	Structural Fill	General Fill

1. Maximum Dry Density (MDD) and optimum water content as determined by the Standard Proctor test (ASTM D 698).
2. High plasticity cohesive fill should not be compacted to more than 100% of Standard Proctor maximum dry density.
3. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D 4253 and D 4254). The caliche, crushed limestone and crushed concrete should be compacted to at least 95% of the Standard Proctor test (ASTM D 698). Materials not amenable to density testing should be placed and compacted to a stable condition observed by the Geotechnical Engineer or representative.

Wet Weather/Soft Subgrade Considerations

Construction operations may encounter difficulties due to the wet or soft surface soils becoming a general hindrance to equipment due to rutting and pumping of the soil surface, especially during and soon after periods of wet weather.

If the subgrade cannot be adequately compacted to minimum densities as described above, one of the following measures will be required:

- Removal and replacement with select fill,
- Chemical treatment of the soil to dry and increase the stability of the subgrade,
- Drying by natural means if the schedule allows.

In our experience with similar soils in this area, chemical treatment is an efficient and effective method to increase the supporting value of wet and weak subgrade. Terracon should be contacted for additional recommendations if chemical treatment of the soils is needed.

Prior to placing any fill, all surface vegetation, topsoil, possible fill material and any otherwise unsuitable materials should be removed from the construction areas. Wet or dry material should either be removed, or moisture conditioned and recompacted. After stripping and grubbing, the subgrade should be proof rolled where possible to aid in locating loose or soft areas. Proof-rolling can be performed with a 15-ton roller or fully loaded dump truck. Soft, dry and low-density soil should be removed or compacted in place prior to placing fill.

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Utility Trench Backfill

The utility trenches are a common source of water infiltration and migration. Utility trenches penetrating beneath the pavements should be effectively sealed to restrict water intrusion and flow through the trenches, which could migrate below the pavement structure. The trench should provide an effective trench plug that extends at least 5 feet from the exterior perimeter of the pavement. The plug material should consist of cementitious flowable fill or low permeability clay. The trench plug material should be placed to surround the utility line. If used, the clay trench plug material should be placed and compacted to comply with the water content and compaction recommendations for structural fill stated previously in this report.

Grading and Drainage

All grades must provide effective drainage away from the pavement areas during and after construction. Water permitted to pond next to the pavement can result in distress. These greater movements can result in unacceptable differential pavements movements.

After construction we recommend verifying final grades to document that effective drainage has been achieved. Grades around the pavements should also be periodically inspected and adjusted as necessary, as part of the pavement's maintenance program.

Utility trenches are a common source of water infiltration and migration. All utility trenches that penetrate beneath the pavements should be effectively sealed to restrict water intrusion and flow through the trenches that could migrate below the pavements.

Earthwork Construction Considerations

Excavations for the proposed pavements, are anticipated to be accomplished with conventional construction equipment. Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of concrete slabs, if applicable. Construction traffic over the completed subgrades should be avoided. The site should also be graded to prevent ponding of surface water on the prepared subgrades. Water collecting over, or adjacent to construction area should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted, prior to concrete slab construction.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

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Construction Observation and Testing

The earthwork efforts should be observed by the Geotechnical Engineer (or others under their direction). Observation should include documentation of adequate removal of surficial materials (vegetation and topsoil) evaluation and remediation of existing fill materials, as well as proof rolling and mitigation of unsuitable areas delineated by the proof roll.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas, if any. Where not specified by local ordinance, one density and water content test should be performed for every 50 linear feet of compacted utility trench backfill and a minimum of one test performed for every 12 vertical inches of compacted backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Shallow Foundations

Based upon the subsurface conditions observed during our investigation a shallow (strip/spread footings) foundation system would be appropriate to support the structural loads of the proposed boat ramp provided the subgrade is prepared as discussed in this report. Recommendations for this type of foundation system is provided in the following sections, along with other geotechnical considerations for this project.

Design Parameters - Compressive Loads

Item	Description
Maximum Net Allowable Bearing Pressure [1, 2]	1,500 psf - foundations bearing upon structural fill
Required Bearing Stratum [3]	GeoModel Layer 1, 2 or undisturbed native soils or structural fill extending to undisturbed native soils.

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Item	Description
Minimum Foundation Dimensions	Per IBC 1809.7
Allowable Passive Resistance[4] (Equivalent Fluid Pressures)	400 psf (cohesive backfill)
Sliding Resistance [5]	0.40 coefficient of friction
Minimum Embedment below Finished Grade [6]	30 inches
Estimated Total Settlement from Structural Loads [2]	About 1 inch
Estimated Differential Settlement [2, 7]	About ½ of total settlement

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. The net allowable bearing pressure provided above include a factor of safety of at least 3.
2. Values provided are for maximum loads noted in **Project Description**. Additional geotechnical consultation will be necessary if higher loads are anticipated.
3. Unsuitable or soft soils should be overexcavated and replaced per the recommendations presented in **Earthwork**.
4. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed, and compacted structural fill be placed against the vertical footing face. Assumes no hydrostatic pressure. The passive pressure provided above include a factor of safety of at least 3.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Frictional resistance for granular materials is dependent on the bearing pressure which may vary due to load combinations. For fine-grained materials, lateral resistance using cohesion should not exceed ½ the dead load.
6. Embedment necessary to minimize the effects of frost and/or seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure.
7. Differential settlements are noted for equivalent-loaded foundations and bearing elevation as measured over a span of 50 feet.

Design Parameters - Overturning and Uplift Loads

Shallow foundations subjected to overturning loads should be proportioned such that the resultant eccentricity is maintained in the center-third of the foundation (e.g., e < b/6, where b is the foundation width). This requirement is intended to keep the entire foundation area in compression during the extreme lateral/overturning load event. Foundation oversizing may be required to satisfy this condition.

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils with consideration to the IBC basic load combinations.

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Item	Description
Soil Moist Unit Weight	120 pcf
Soil Effective Unit Weight[1]	58 pcf
Soil weight included in uplift resistance	Soil included within the prism extending up from the top perimeter of the footing at an angle of 20 degrees from vertical to ground surface.

1. Effective (or buoyant) unit weight should be used for soil above the foundation level and below a water level. The high groundwater level should be used in uplift design as applicable.

Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the observation of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil, prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

Excavation should be accomplished with a smooth-mouthed bucket. If a toothed bucket is used, excavation with this bucket should be stopped 6 inches above the final bearing surface and the excavation completed with a smooth-mouthed bucket or by hand labor. Due to the presence of sandy soils, caving of excavations may occur. Therefore, the contractor should be prepared to use forms.

Sensitive soils exposed at the surface of footing excavations may require surficial compaction with hand-held dynamic compaction equipment prior to placing structural fill, steel, and/or concrete. Should surficial compaction not be adequate, construction of a working surface consisting of either crushed stone or a lean concrete mud mat may be required prior to the placement of reinforcing steel and construction of foundations.

If unsuitable bearing soils are observed at the base of the planned footing excavation, the excavation should be extended deeper to suitable soils, and the footings could bear directly on these soils at the lower level or on lean concrete backfill placed in the excavations. The lean concrete replacement zone is illustrated on the sketch below.

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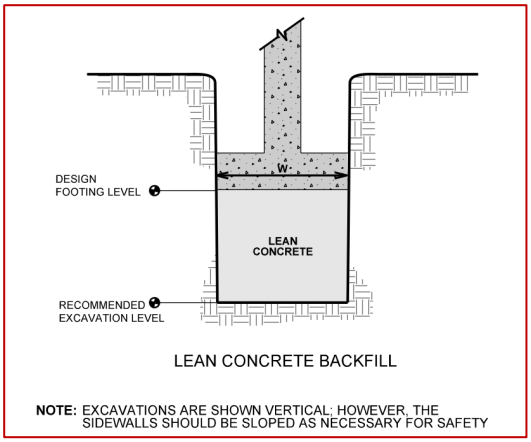
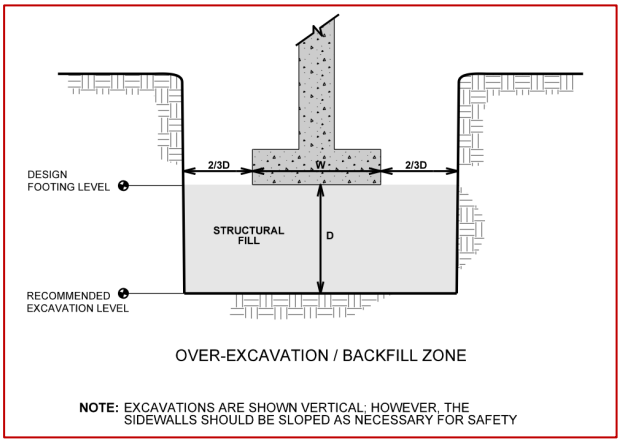


Overexcavation for structural fill placement below footings should be conducted as shown below. The overexcavation should be backfilled up to the footing base elevation, with imported fill placed, as recommended in the **Earthwork** section.



Flatwork

Grade supported flatwork may be subjected to the movements of swelling soils unless proper measures are taken. Differential movement between the flatwork and final grading may result in a trip hazard. Consideration should be given to supporting the flatwork on select fill. The existing Potential Vertical Rise (PVR) of the soils within the proposed project site in present condition is less than 1 inch. Heave of flatwork could be greater due to the moderate surcharge imposed on the subgrade.

Preparing the flatwork as recommended in this report will help maintain the PVR to less than 1 inch. If measures are not taken to address differential movement in the design stage, this issue may become a constant maintenance issue during the life of the flatwork. Proper drainage of the site is also important and is addressed in this report.

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Construction Adjacent to Existing Bulkhead Structure

Differential settlement between the additions and the existing bulkhead structure is expected to approach the magnitude of the total settlement of the addition. Expansion joints may be provided between the existing structure and the proposed addition to accommodate differential movements between the two structures. Underground piping (if any) between the two structures should be designed with flexible couplings and utility knockouts in foundation walls should be oversized, so minor deflections in alignment do not result in breakage or distress. Care should be taken during excavation adjacent to existing foundations, to avoid disturbing existing foundation bearing soils.

New footings should bear at or near the bearing elevation of immediately adjacent existing foundations. Depending upon their locations and current loads on the existing footings, footings for the new addition could cause settlement of adjacent walls. To reduce this concern and risk, clear distances at least equal to the new footing widths should be maintained between the addition's footings and footings supporting the existing bulkhead.

We understand existing foundations may support additional load from the boats and of the new additions. It is possible additional loads on the existing foundations could cause other bulkhead settlements to occur. The structural capacity of existing foundations should be evaluated by a licensed structural engineer, where increases in loading are planned.

Deep Foundations

Based on the subsurface conditions observed during our field and laboratory programs, a drilled pier foundation system may be considered to support the structural loads of the proposed light poles. Recommendations for this type of foundation system are provided in the following sections, along with other geotechnical considerations for this project.

Prior to starting the foundation design, it is generally best to begin with the maximum diameter that can be used based on the dimensions of the light pole base and the anchor bolt diameter. The analysis then proceeds using the maximum pier diameter and varying the pier embedment depth as appropriate to resist both the axial and lateral load cases. The pier diameter and depth can be altered to result in the most cost-effective design within the limitations of the structural requirements.

Drilled Pier Axial Loading

Axial Loading: Compressive axial loads on pier foundations are resisted by both side friction along the shaft and by end bearing at the base of the shaft, while uplift loads are resisted solely by side friction along the shaft and by the weight of the shaft. The following equations are recommended to evaluate the pier foundation sizes in soil for both compressive and tensile (uplift) axial loading:

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$Q_c = Q_s + Q_b$
$Q_s = \pi d\,(f_s)(h)$
$Q_b = 0.25\pi d^2(q_{eb})$
$Q_t = \pi d\,(f_s)(h)(R) + W$

Where:
Q_c = ultimate pier capacity in compression
Q_s = ultimate skin friction capacity
Q_b = ultimate end bearing capacity
Q_t = ultimate pier capacity in tension (uplift)
d = pier diameter
f_s = ultimate skin friction
h = pier segment length
q_{eb} = ultimate end bearing pressure
R = uplift reduction factor (equal to 0.7 for sand and 0.9 for clay)
W = effective weight of the shaft

The computations of ultimate skin friction, f_s, and ultimate end bearing pressure, q_{eb}, are dependent upon whether the soils are cohesive or cohesionless as follows:

Cohesive soils:	$f_s = \alpha c_u$	Cohesionless soils: $f_s = \sigma' K \tan\delta$
	$q_{eb} = c_u N_c$	$q_{eb} = \sigma' N_q$

Where:
α = skin friction adhesion factor
c_u = undrained shear strength of the soil
N_c = end bearing capacity factor for clay soil
σ' = effective vertical overburden pressure
K = coefficient of lateral earth pressure
N_q = end bearing capacity factor for granular soil
δ = soil to pier friction angle (equal to soil angle of internal friction (ϕ) for concrete piers or piles and equal to ϕ minus 4 degrees for steel piles)

The above equations will yield ultimate capacities. A factor of safety of 3 should be applied to the bearing capacity, while a factor of safety of 2 should be applied to both the friction and ultimate uplift force. Design criteria for axial analysis is presented in the L PILE table in **Supporting Information**. The side shear should be neglected for the upper 4 feet of soil in contact with the pier shaft.

Total settlement due to the compression loading on this pier size are expected to be less than 1 inch for adequately designed and installed pier foundations. Settlement of drilled shafts will be more sensitive to installation techniques than to soil-structure interaction.

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Drilled Pier Lateral Loading

Lateral Loading: Several methods, including hand solutions and computer programs, are available for calculating the lateral behavior of piles and drilled piers. Most of these methods rely on "key" soil parameters such as soil elastic properties (E and k_s), strain at 50 percent of the principal stress difference (ε_{50}), undrained shear strength (c), and load-deflection (p-y) criteria. The *p-y* criteria, which are commonly used to model soil reaction, were developed from instrumented load tests and are generally considered to provide the best model of soil behavior under short-term lateral loading. The criteria for lateral load analysis presented in the L PILE table in **Supporting Information** is for use with the computer program L PILE.

Factors of safety are not generally applied to the lateral load analysis. A performance criterion, or "limit state", are usually considered. For most foundations subjected to lateral loads, the pier foundation is designed with a limit of 1 inch of deflection at the top of the pier and 1 degree of rotation as measured from the vertical axis of the pier. The analysis is generally conducted using the working loads and the limit state values. The applied loads are then doubled to evaluate the deflection and rotation at the top of the pier to determine if the foundation will topple over under extreme overload. This overload condition may indicate that the foundation would deflect or rotate such that the structure will tilt but the foundation will not experience failure. Structural limits, such as moment capacity and shear, may control the design and should be evaluated by the Structural Engineer.

Drilled Pier Construction Considerations

The drilling contractor should be experienced in the subsurface conditions observed at the site, and the excavations should be performed with equipment capable of providing a clean bearing surface. The drilled straight-shaft foundation system should be installed in general accordance with the procedures presented in "Standard Specification for the Construction of Drilled Piers", ACI Publication No. 336.1-01. or "Drilled Shafts: Construction Procedures and Design Methods," FHWA Publication No. FHWA-NHI 18-024.

The contractor is generally expected to use conventional "dry" techniques for installation of the drilled shaft. Groundwater was encountered during the drilling activities. See boring logs for detailed information. Groundwater levels are influenced by seasonal and climatic conditions, which result in fluctuations in groundwater elevations. Additionally, it is common for water to be present after periods of significant rainfall. Casing or slurry drilling procedures could be required in soils zones of higher sand content to reduce the potential for excavation sidewall collapse.

The drilling contractor should remove all soft and disturbed soils from the base of the drilled pier prior to placing concrete. The drilled shaft installation process should be performed under the observation of the Geotechnical Engineer. The Geotechnical Engineer

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should document the shaft installation process including soil and groundwater conditions observed, consistency with expected conditions, and details of the installed shaft.

Below-Grade Structures

The project may involve design and construction of below grade walls adjacent to the bulkhead structure and boat ramp area. A below grade wall differs from a retaining wall since the top is restrained from movement, thus higher lateral earth pressures are induced into the wall when compared to a cantilevered retaining wall.

At the time this report was prepared, specific information regarding retaining or below grade wall configuration and type was not available.

Lateral Earth Pressures

Design Parameters

We assume that the walls will need to be designed for little to no outward movements. As a result, we have considered "at rest" earth pressure conditions for computations of the equivalent fluid density.

The resistance to this lateral load can be achieved by doweling the top of the floor slab to the member and relying on the soil in front of the member to resist this driving force. The upper 12 inches of soil in front of the member should be neglected in the calculations.

Lateral earth pressures on the below grade walls may be determined using the parameters provided in the **Lateral Earth Pressures** section of this report.

Structures with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to values indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction, and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown in the diagram below. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes wall movement. The "at-rest" condition assumes no wall movement and is commonly used for basement walls, loading dock walls, or other walls restrained at the top. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls (unless stated).

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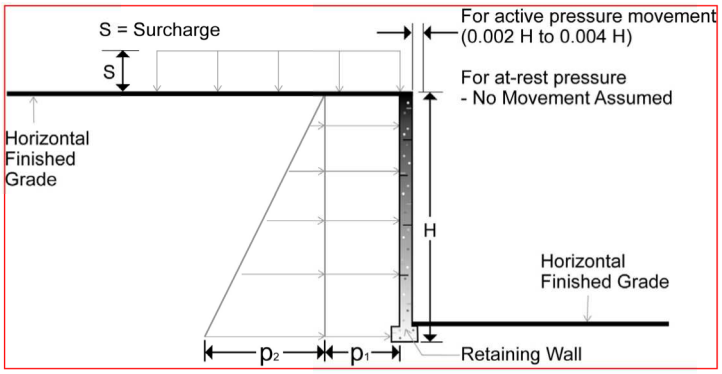

Lateral Earth Pressure Design Parameters

Earth Pressure Condition [1]	Coefficient for Backfill Type [2]	Surcharge Pressure [3] p_1 (psf)	Equivalent Fluid Pressures (psf) [2,4]	
			Unsaturated [5]	Submerged [5]
Active (Ka)	Granular - 0.31 Fine Grained - 0.41	(0.31)S (0.41)S	(40)H (50)H	(85)H (85)H
At-Rest (Ko)	Granular - 0.47 Fine Grained - 0.58	(0.47)S (0.58)S	(60)H (70)H	(95)H (95)H
Passive (Kp)	Granular - 3.25 Fine Grained - 2.46	--- ---	(425)H (295)H	(280)H (205)H

1. For active earth pressure, wall must rotate about base, with top lateral movements 0.002 H to 0.004 H, where H is wall height. For passive earth pressure, wall must move horizontally to mobilize resistance. Fat clay or other expansive soils should not be used as backfill behind the wall.
2. Uniform, horizontal backfill, with a maximum unit weight of 120 pcf.
3. Uniform surcharge, where S is surcharge pressure.
4. Loading from heavy compaction equipment is not included.
5. To achieve "Unsaturated" conditions, follow guidelines in **Subsurface Drainage for Below-Grade Walls** below. "Submerged" conditions are recommended when drainage behind walls is not incorporated into the design.
6. See Shallow Foundations (Compressive Loads) section of this report for below grade wall footing design.
7. Soil parameters: Select Fill (120 pcf with 25° Ø) and Granular Backfill (130 pcf with 32° Ø).

Backfill placed against structures should consist of granular soils or low plasticity cohesive soils. For the granular values to be valid, the granular backfill must extend out and up from the base of the wall at an angle of at least 45 degrees from vertical for the active case. On-site Fat Clay (CH) soils will not be used as backfill for retaining structures.

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Footings, floor slabs or other loads bearing on backfill behind walls may have a significant influence on the lateral earth pressure. Placing footings within wall backfill and in the zone of active soil influence on the wall should be avoided unless structural analyses indicate the wall can safely withstand the increased pressure.

The lateral earth pressure recommendations given in this section are applicable to the design of rigid retaining walls subject to slight rotation, such as cantilever, or gravity type concrete walls. These recommendations are not applicable to the design of modular block - geogrid reinforced backfill walls (also termed MSE walls). Recommendations covering these types of wall systems are beyond the scope of services for this assignment. However, we would be pleased to develop a proposal for evaluation and design of such wall systems upon request.

Pavements

We understand that this project will consist of rigid pavement sections. Pavement subgrade preparations are included in this section to limit changes in soil moisture conditions to help mitigate the effects of soil movement. However, even if these recommendations are followed some pavement distress could still occur.

General Pavement Comments

Pavement designs are provided for the traffic conditions and pavement life conditions as noted in **Project Description** and in the following sections of this report. A critical aspect of pavement performance is site preparation. Pavement designs noted in this section must be applied to the site which has been prepared as recommended in the **Earthwork** section.

Support characteristics of subgrade for pavement design do not account for shrink/swell movements of an expansive clay subgrade, such as soils observed on this project. Thus, the pavement may be adequate from a structural standpoint, yet still experience cracking and deformation due to shrink/swell related movement of the subgrade.

Subgrade Preparation

We have provided the following subgrade preparation option that is intended to reduce the magnitude of soil movements beneath the grade supported pavements at this site and to reduce any possible settlement beneath the thick fill body to an acceptable level:

- Prior to construction, any vegetation, loose topsoil, and any otherwise unsuitable materials should be removed from the new pavement areas.

- Excavate 2 to 3 feet of dredged materials, remove and stockpile for reuse.

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- The exposed subgrade should be proof rolled with a fully loaded dump or water truck to evidence any weak yielding zones.

- Over-excavate any confirmed weak yielding zones, both vertically and horizontally, to expose competent soil. The exposed subgrade should be moisture conditioned within 2 percent of the optimum moisture content and compacted to at least 95 percent of the maximum dry density determined in accordance with ASTM D 698.

- Stockpiled dredged material or imported select fill should be placed in the parking area to achieve the proposed finished grade. Each lift should be moisture conditioned within 2 percent of the optimum moisture content and compacted to at least 95 percent of the maximum dry density determined in accordance with ASTM D 698.

- The final layer should consist of granular select fill material or treated subgrade as indicated in the rigid pavement section table below.

The pavement subgrade should be moisture conditioned and compacted to the moisture contents and densities as described in section **Fill Placement and Compaction Requirements** prior to placing fill.

Pavement Design Parameters

Traffic patterns and anticipated loading conditions were not available at the time this report was prepared. However, we anticipate that traffic loads will be produced primarily by light traffic, heavy trucks, and trash removal trucks. Pavement thickness can be determined using ACI 330 "Guide to Design and Construction of Concrete Parking Lots", AASHTO, and other methods if specific wheel loads, axle configurations, frequencies, and desired pavement life are provided.

Terracon can provide thickness recommendations for pavements subjected to loads other than the above-mentioned traffic if this information is provided.

Listed below are pavement component thicknesses, which may be used as a guide for pavement systems at this site. These systems were derived based on general characterization of the subgrade. Specific testing (such as CBR's, resilient modulus tests, etc.) was not performed for this project to evaluate the support characteristics of the subgrade.

Pavement Section Thicknesses

The following table provides a minimum thickness for a rigid pavement section:

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Rigid Pavement System

Component [1]	Minimum Thickness (inches)		
	Light	Medium	Heavy
Reinforced PC Concrete	5	6	8
Granular Base Material [2, 3]	4	4	4
Moisture Conditioned Subgrade	6	6	6

1. All materials should meet the current Department of Transportation (TxDOT) Standard Specifications for Highway and Bridge Construction. Concrete Pavement - TxDOT Portland Cement Concrete Class P or applicable ACI standards.
2. In areas of anticipated heavy traffic, fire trucks, delivery trucks or concentrated loads (e.g. dumpster pads), and areas with repeated turning or maneuvering of heavy vehicles. Six (6) inches of treated subgrade may be used instead of 4 inches of granular base material.
3. If treated subgrade is selected as an alternate, Hot Mix Asphaltic Concrete (HMAC) 2014 TxDOT Standard Specifications Item 340 or Asphalt Treated Base (ATB) Item 292 should be used as bond breaker between the concrete slab and the treated subgrade.

Areas for parking of heavy vehicles, concentrated turn areas, and start/stop maneuvers could require thicker pavement sections. Edge restraints (i.e. concrete curbs or aggregate shoulders) should be planned along curves and areas of maneuvering vehicles.

Although not required for structural support, a minimum 4-inch-thick base course layer is recommended to help reduce potential for slab curl, shrinkage cracking, and subgrade pumping through joints. Proper joint spacing will also be required to prevent excessive slab curling and shrinkage cracking. Joints should be sealed to prevent entry of foreign material and doweled where necessary for load transfer. PCC pavement details for joint spacing, joint reinforcement, and joint sealing should be prepared in accordance with ACI 330 and ACI 325.

Where practical, we recommend early-entry cutting of crack-control joints in PCC pavements. Cutting of the concrete in its "green" state typically reduces the potential for micro-cracking of the pavements prior to the crack control joints being formed, compared to cutting the joints after the concrete has fully set. Micro-cracking of pavements may lead to crack formation in locations other than the sawed joints, and/or reduction of fatigue life of the pavement.

Openings in pavements, such as decorative landscaped areas, are sources for water infiltration into surrounding pavement systems. Water can collect in the islands and migrate into the surrounding subgrade soils thereby degrading support of the pavement. Islands with raised concrete curbs, irrigated foliage, and low permeability near-surface

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soils are areas of concern. The civil design for the pavements with these conditions should include features to restrict or collect and discharge excess water from the islands. Examples of features are edge drains connected to the stormwater collection system, longitudinal subdrains, or other suitable outlets and impermeable barriers preventing lateral migration of water such as a cutoff wall installed to a depth below the pavement structure.

Pavement Section Materials

Presented below are selection and preparation guidelines for various materials that may be used to construct the pavement sections. Submittals should be made for each pavement material. The submittals should be reviewed by the Geotechnical Engineer and appropriate members of the design team and should provide test information necessary to verify full compliance with the recommended or specified material properties.

- **Reinforced PC Concrete**: The materials and properties of reinforced Portland cement concrete pavement shall meet applicable requirements in the ACI Manual of Concrete Practice. The portland cement concrete mix should have a minimum 28-day compressive strength of 4,000 psi.

- **Granular Base Material**: Granular base material should be composed of crushed limestone or crushed concrete meeting the requirements of 2014 TxDOT Standard Specifications Item 247, Type A or D, Grade 1-2 or 3.

  Granular base "caliche" material meeting the requirements of 2014 TxDOT Standard Specification Manual Item 247, Type B, Grade 1-2 or 3 may be used. To improve the quality of the granular base material (caliche) may be treated with about 2 percent by dry weight of cement (modifier).

  The granular base material should be compacted to at least 95 percent of the maximum dry density determined in accordance with the modified moisture-density relationship test (ASTM D 1557), or applicable ASTM standard and moisture conditioned within 2 percent of the optimum moisture content.

- **Prime Coat**: The prime coat should consist of sealing the base with prime oil such as an MC-30 or an emulsion. The prime coat should be applied at a rate of about 0.2 to 0.5 gallons per square yard with materials which meet 2014 TxDOT Standard Specifications, Item 300 Asphalts, Oils and Emulsions. The prime coat will help to reduce penetration of rainfall and other moisture which penetrates the base. However, due to weathering and traffic, treatment will probably be necessary on a periodic basis to protect the base. In addition, isolated areas of the base which have developed potholes or other distress may need to be removed and replaced prior to application of a prime coat for maintenance. The prime coat without

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additional surface treatment may not be very effective when using non-treated base material.

- **Treated Subgrade**: The subgrade soils may be treated with cement (modifier) in accordance with 2014 TxDOT Standard Specifications Item 275. The recommended percentage of modifier is for estimating and planning. The actual quantity of modifier required should be determined at the time of construction by laboratory tests on bulk samples of the subgrade soils.

  We anticipate that the on-site surficial soils be treated with about 3 percent of modifier. This percentage is given as application by dry weight and is typically equivalent to about 16 pounds of modifier per square yard per 6-inch depth. The subgrade should be compacted to a minimum of 95 percent of the maximum dry density determined in accordance with the Standard Moisture-Density relationship test (ASTM D 698) or applicable ASTM standard at moisture content within 2 percentage points of the optimum moisture content. Preferably, traffic, should be kept off the treated subgrade for about 3 to 5 days to facilitate curing of the soil - chemical mixture; in addition, the subgrade is not suitable for heavy construction traffic prior to paving.

  Post-construction subgrade movements and some cracking of the pavements are not uncommon for subgrade conditions such as those observed at this site. Although chemical treatment of the subgrade will help to reduce such movement/cracking, this movement/cracking cannot be economically eliminated.

  Based on the experience with local soils, a minimum compressive strength of 120 psi at 7 days should be obtained for the treated subgrade. An excessive addition of modifier may result in extensive shrinkage cracking that may be reflected through the upper layers.

- **Moisture Conditioned Subgrade**: The subgrade should be scarified to a depth of 8 inches and moisture conditioned within 2 percent of the optimum moisture content. The subgrade should then be compacted to at least 95 percent of the maximum dry density determined in accordance with ASTM D 698. This should result in a compacted, moisture conditioned layer about 6 inches thick.

Details regarding subgrade preparation, fill materials, placement and compaction are presented in **Earthwork** section under subsections **Fill Material Types** and **Fill Placement and Compaction Requirements**.

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Pavement Joints and Reinforcement

The following is recommended for all concrete pavement sections in this report. Refer to ACI 330 "Guide for Design and Construction of Concrete Parking Lots" and "TxDOT Standard Specifications" for additional information.

Item	Description
Reinforcing Steel	No 3 reinforcing steel bars at 12 inches on-center-each-way, Grade 60. No 4 reinforcing steel bars at 18 inches on-center-each-way, Grade 60.
Contraction Joint Spacing	12.5 feet each way for pavement thickness of 5 to 5.5 inches. 15 feet each way for pavement thickness of 6 inches or greater. Saw cut control joints should be cut within 6 to 12 hours of concrete placement.
Contraction Joint Depth	At least ¼ of pavement thickness.
Contraction Joint Width	One-fourth inch or as required by joint sealant manufacturer.
Construction Joint Spacing	To attempt to limit the quantity of joints in the pavement, consideration can be given to installing construction joints at contraction joint locations, where it is applicable.
Construction Joint Depth/Width	Full depth of pavement thickness. Construct sealant reservoir along one edge of the joint. Width of reservoir to be ¼ inch or as required by joint sealant manufacturer. Depth of reservoir to be at least ¼ of pavement thickness.
Isolation Joint Spacing	As required to isolate pavement from structures, etc.
Isolation Joint Depth	Full depth of pavement thickness.
Isolation Joint Width	½ to 1 inch or as required by the joint sealant manufacturer.
Expansion Joint	In this locale, drying shrinkage of concrete typically significantly exceeds anticipated expansion due to thermal affects. As a result, the need for expansion joints is eliminated provided all joints (including saw cuts) are sealed. Construction of an unnecessary joint may be also become a maintenance problem. All joints should be sealed. If all joints, including saw cuts, are not sealed then expansion joints should be installed.

All construction joints have dowels. Dowel information varies with pavement thickness as presented as follows:

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Pavement Thickness, inches [1]	5 to 6	8
Dowels Diameter, inches	⅝	1
Dowel Spacing on Center, inches	12	12
Dowel Length, inches	14	14
Dowel Embedment, inches	6	6

1. In relatively thin pavement sections (7 inches or less) round dowels can be impractical or counterproductive. The use of dowels may be economically justified where there are poor subgrade support conditions or heavy truck traffic.

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the granular subbase.

Based on the possibility of shallow and/or perched groundwater, we recommend installing a pavement subdrain system to control groundwater, improve stability, and improve long-term pavement performance.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic upkeep should be anticipated. Preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Pavement care consists of both localized (e.g., crack, and joint sealing and patching) and global maintenance (e.g., surface sealing). Additional engineering consultation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Final grade adjacent to paved areas should slope down from the edges at a minimum 2%.

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- Subgrade and pavement surfaces should have a minimum 2% slope to promote proper surface drainage.
- Install pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.
- Place compacted, low permeability backfill against the exterior side of curb and gutter.
- Place curb, gutter and/or sidewalk directly on clay subgrade soils rather than on unbound granular base course materials.

Frost Considerations

Based on ACI 362 and IBC standards, the project site is located in Zone I (negligible), which represents the mildest conditions where freezing temperatures never occur, and deicing salts are not used, and the effects of frost penetration should be considered negligible.

However, if any possible frost action needs to be eliminated in critical areas, we recommend the use of non-frost susceptible (NFS) fill. Placement of NFS material in large areas may not be feasible; however, the following recommendations are provided to help reduce potential frost heave:

- Provide surface drainage away from the slabs, and toward the site storm drainage system.
- Install drains around the perimeter and below slabs and connect them to the storm drainage system.
- Grade clayey subgrades, so groundwater potentially perched in overlying more permeable subgrades, such as sand or aggregate base, slope toward a site drainage system.
- Place NFS fill as backfill beneath slabs critical to the project.
- Place a 3 horizontal to 1 vertical (3H:1V) transition zone between NFS fill and other soils.
- Place NFS materials in critical sidewalk areas.

As an alternative to extending NFS fill to the full frost depth, consideration can be made to placing extruded polystyrene or cellular concrete under a buffer of at least 12 inches of NFS material.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly effect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

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Figures

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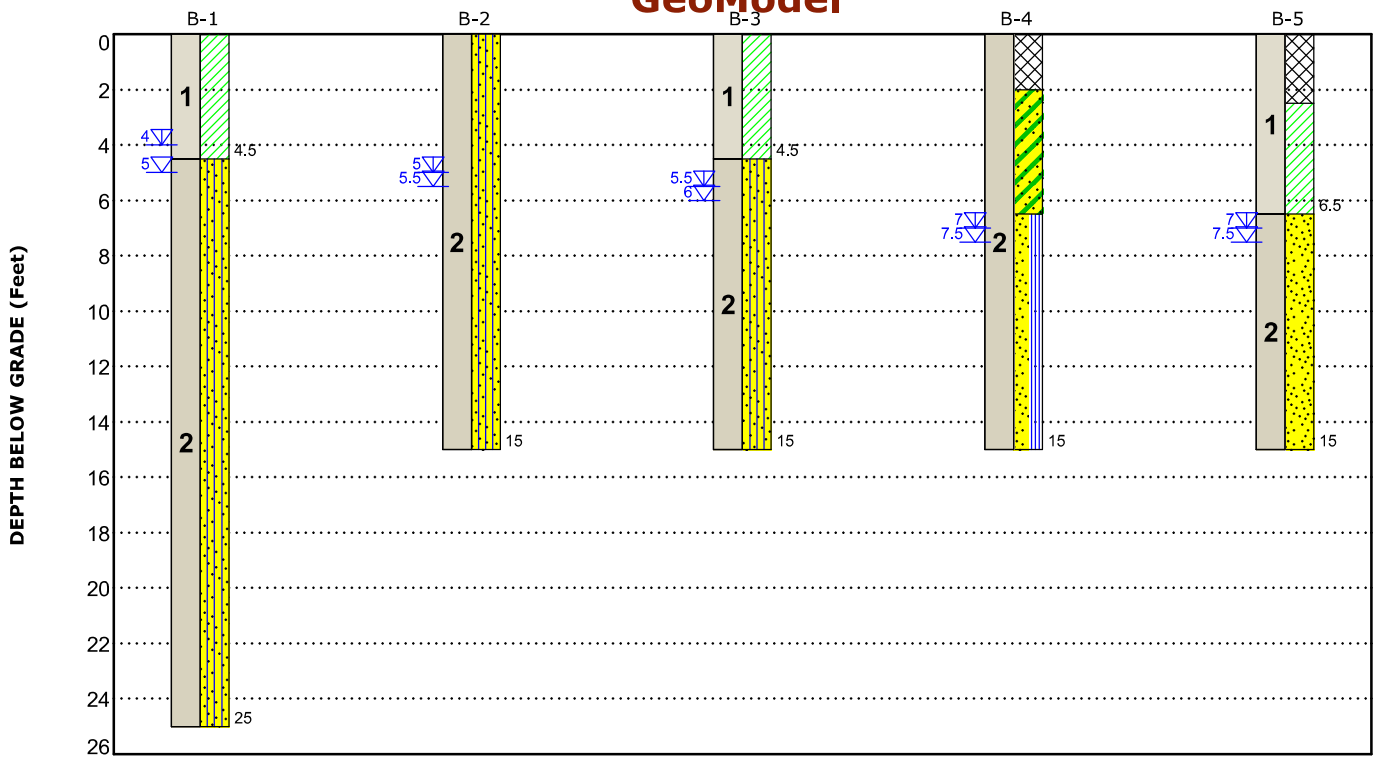
Boat Ramp and Parking Lot
200 W. Marisol Street | South Padre Island, Texas
Terracon Project No. 88225026

Terracon
1506 Mid Cities Dr
Pharr, TX

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Clay	Fill: Lean Clay CL) / Lean Clay (CL); medium stiff to stiff
2	Sand	Fill: Clayey Sand (SC) / Clayey Sand (SC) / Silty Sand (SM) / Poorly Graded Sand with Silt (SP-SM) / Poorly Graded Sand (SP); very loose to medium dense

Legend

- Lean Clay
- Fill
- Poorly-graded Sand with Silt
- Silty Sand
- Clayey Sand
- Poorly-graded Sand

▽ First Water Observation
▽ Second Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project.
Numbers adjacent to soil column indicate depth below ground surface.

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Attachments

ATTACHMENT 'B'
Addendum No. 1

Exploration and Testing Procedures

Field Exploration

Number of Borings	Approximate Boring Depth (feet)	Location
1	25	Proposed Boat Ramp Area
4	15	Parking and Access Areas

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±20 feet) and referencing existing site features. If elevations and a more precise boring layout are desired, we recommend borings be surveyed.

Subsurface Exploration Procedures: We advanced the borings with a truck-mounted, drill rig using continuous flight augers (solid stem and/or hollow stem, as necessary, depending on soil conditions). Five samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon was driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. For safety purposes, all borings were backfilled with auger cuttings after the groundwater observations were completed.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

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- Moisture Content
- Atterberg Limits
- Grain Size Analysis
- Sulfate Content

The laboratory testing program often included examination of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

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Site Location and Exploration Plans

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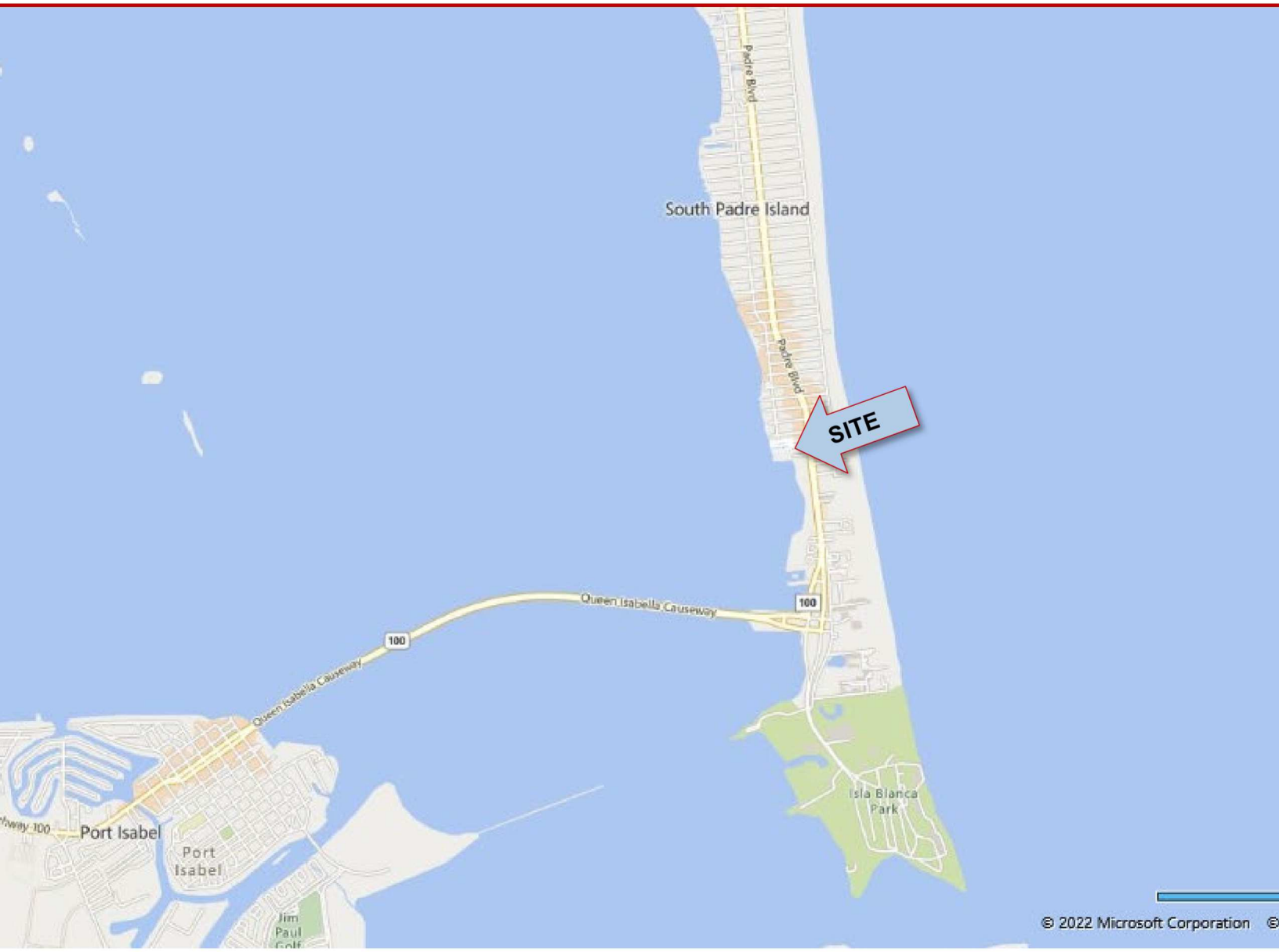

R GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

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tion Plan

R GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

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Exploration and Laboratory Results

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Boat Ramp and Parking Lot
200 W. Marisol Street | South Padre Island, Texas
Terracon Project No. 88225026

Terracon
1506 Mid Cities Dr
Pharr, TX

Boring Log No. B-1

Location: See Exploration Plan

Latitude: 26.096610° Longitude: -97.167898°

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**LEAN CLAY (CL)**, brown, medium stiff			2-2-3 N=5				10.9		28-15-13	
		- Fat Clay (CH) at 2½ feet			3-3-3 N=6				55.1		53-24-29	88
		4.5										
2		**SILTY SAND (SM)**, bluish gray, loose			3-3-5 N=8				19.1			20
					2-3-2 N=5				19.5			
					2-2-2 N=4				19.8			17
		- very loose at 13½ feet			2-1-2 N=3				20.5			
					3-3-3 N=6				20.7			
					2-3-2 N=5				20.8			11
		25.0										
		Boring Terminated at 25 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
- 5 feet - While drilling
- 4 feet - After 15 minutes
- Cave-In Depth

Drill Rig
CME 55

Hammer Type
Automatic

Driller
SWD

Logged by
NG

Boring Started
03-01-2022

Boring Completed
03-01-2022

Notes

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Addendum No. 1

Advancement Method
Dry augered from 0 to 25 feet.

Abandonment Method
Boring backfilled with soil cuttings after delayed water levels were measured.

Boat Ramp and Parking Lot
200 W. Marisol Street | South Padre Island, Texas
Terracon Project No. 88225026

Terracon
1506 Mid Cities Dr
Pharr, TX

Boring Log No. B-2

Location: See Exploration Plan

Latitude: 26.096752° Longitude: -97.167572°

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
2		0			2-2-3 N=5				11.8		36-17-19	46
					3-2-3 N=5				18.5			19
		5	▽		11-14-15 N=29				16.7			
					10-9-9 N=18				12.5			16
					5-3-3 N=6				22.9			
		10	▨									
		15			3-2-2 N=4				23.4			15
		15.0										

Boring Terminated at 15 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ 5.5 feet - While drilling
▽ 5 feet - After 15 minutes
▨ Cave-In Depth

Drill Rig
CME 55

Hammer Type
Automatic

Driller
SWD

Logged by
NG

Boring Started
03-01-2022

Boring Completed
03-01-2022

Notes

ATTACHMENT 'B'
Addendum No. 1

Advancement Method
Dry augered from 0 to 15 feet.

Abandonment Method
Boring backfilled with soil cuttings after delayed water levels were measured.

Boat Ramp and Parking Lot
200 W. Marisol Street | South Padre Island, Texas
Terracon Project No. 88225026

Terracon
1506 Mid Cities Dr
Pharr, TX

Boring Log No. B-3

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 26.096659° Longitude: -97.166981° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**LEAN CLAY (CL)**, brown, medium stiff				3-3-3 N=6				31.8		38-18-20	
		- Fat Clay (CH) with sand at 2½ feet				2-3-2 N=5				54.9		57-22-35	72
		4.5	5										
2		**SILTY SAND (SM)**, bluish gray, loose to medium dense		▽		5-8-10 N=18				21.5			
		- Poorly Graded Sand (SP) at 6½ feet				4-7-9 N=16				21.7			2
						3-2-2 N=4				25.7			
			10	▨									
		- very loose at 13½ feet				2-2-1 N=3				27.3			12
		15.0	15										
		Boring Terminated at 15 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ 6 feet - While drilling
▽ 5.5 feet - After 15 minutes
▨ Cave-In Depth

Drill Rig
CME 55

Hammer Type
Automatic

Driller
SWD

Logged by
NG

Boring Started
03-01-2022

Boring Completed
03-01-2022

Notes

ATTACHMENT 'B'
Addendum No. 1

Advancement Method
Dry augered from 0 to 15 feet.

Abandonment Method
Boring backfilled with soil cuttings after delayed water levels were measured.

Boat Ramp and Parking Lot
200 W. Marisol Street | South Padre Island, Texas
Terracon Project No. 88225026

Terracon
1506 Mid Cities Dr
Pharr, TX

Boring Log No. B-4

Location: See Exploration Plan

Latitude: 26.096664° Longitude: -97.167611°

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
		0										
		FILL - CLAYEY SAND (SC), light brownish gray, loose			2-2-2 N=4				16.3		27-13-14	
		2.0										
		CLAYEY SAND (SC), light brown, loose			2-2-4 N=6				18.9			31
					2-4-5 N=9				18.6		39-16-23	
		6.5										
2		**POORLY GRADED SAND WITH SILT (SP-SM)**, grayish brown, medium dense			7-13-14 N=27				17.4		NP	
					4-6-4 N=10				22.9			9
		- very loose at 13½ feet			1-2-1 N=3				25.0			
		15.0										
		Boring Terminated at 15 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
7.5 feet - While drilling
7 feet - After 15 minutes
Cave-In Depth

Drill Rig
CME 55

Hammer Type
Automatic

Driller
SWD

Logged by
NG

Boring Started
05-21-2024

Boring Completed
05-21-2024

Notes
NP = Non-Plastic

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Advancement Method
Dry augered from 0 to 15 feet.

Abandonment Method
Boring backfilled with soil cuttings after delayed water levels were measured.

Boat Ramp and Parking Lot
200 W. Marisol Street | South Padre Island, Texas
Terracon Project No. 88225026

Terracon
1506 Mid Cities Dr
Pharr, TX

Boring Log No. B-5

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 26.096695° Longitude: -97.167328° Depth (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
		FILL - LEAN CLAY (CL), light brownish gray, medium stiff				4-3-3 N=6				10.5		29-14-15	
		2.5											
1		**LEAN CLAY (CL)**, sandy, light brown, medium stiff to stiff, Fat Clay (CH) to 4 feet				3-3-4 N=7				33.3		53-17-36	67
			5			2-4-6 N=10				18.5			
		6.5											
2		**POORLY GRADED SAND (SP)**, light brown, medium dense to loose				7-7-6 N=13				19.8			3
						1-2-5 N=7				20.8			
			10										
		- Poorly Graded Sand with Clay (SP-SC), very loose at 13½ feet				1-1-1 N=2				22.8		33-15-18	9
		15.0											
		Boring Terminated at 15 Feet	15										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
7.5 feet - While drilling
7 feet - After 15 minutes
Cave-In Depth

Drill Rig
CME 55

Hammer Type
Automatic

Driller
SWD

Logged by
NG

Boring Started
05-21-2024

Boring Completed
05-21-2024

Notes

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Advancement Method
Dry augered from 0 to 15 feet.

Abandonment Method
Boring backfilled with soil cuttings after delayed water levels were measured.

Supporting Information

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Terracon
1506 Mid Cities Dr
Pharr, TX

General Notes

Sampling	Water Level	Field Tests
Split Spoon	Water Initially Encountered Water Level After a Specified Period of Time Water Level After a Specified Period of Time Cave In Encountered Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	N Standard Penetration Test Resistance (Blows/Ft.) (HP) Hand Penetrometer (T) Torvane (DCP) Dynamic Cone Penetrometer UC Unconfined Compressive Strength (PID) Photo-Ionization Detector (OVA) Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	**Standard Penetration or N-Value (Blows/Ft.)**	**Consistency**	**Unconfined Compressive Strength Qu (tsf)**	**Standard Penetration or N-Value (Blows/Ft.)**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

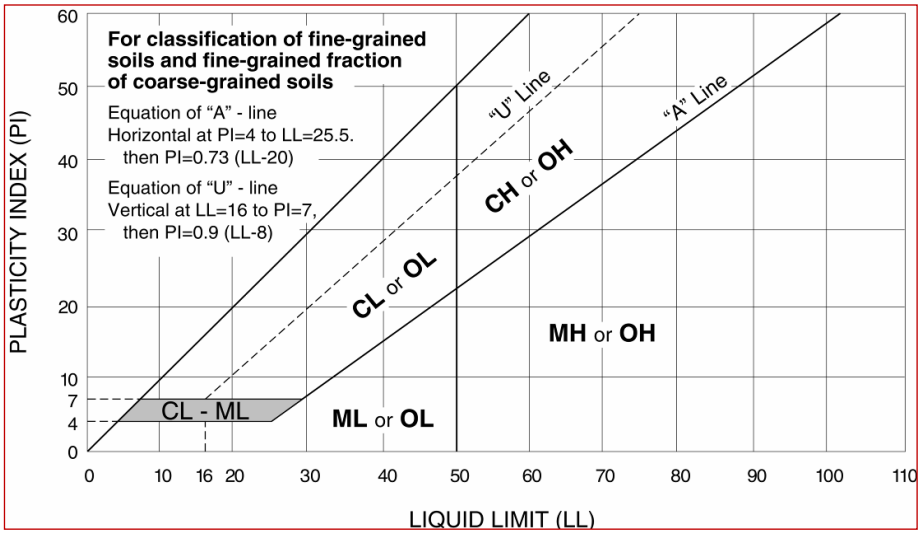
Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.



ATTACHMENT 'B'
Addendum No. 1

LATERAL AND AXIAL CAPACITY ANALYSES
DESIGN SOIL PARAMETERS FOR UNDRAINED CONDITIONS

Boring B-1 to B-3

	Depth to Bottom of Layer (feet)	Total Unit Weight (pcf)	Effective Unit Weight (pcf)	Undrained Shear Strength (psf)	Strain Factor (e50)	LPILE Soil Type	Friction Angle (degrees)	Adhesion Factor (a)	Horizontal Stress Coefficient K	Subgrade Modulus ks (pci)	Bearing Capacity Fact		
											Nc^5	Nq	
	4	110	110	750	0.012	3	---	---	---	380	6	1	
	25	110	48	---	---	4	30	---	0.75	62	30	18	

1. Design depth to subsurface water is about 4 feet.
2. For uplift conditions, the computed skin friction should be multiplied by 0.9 for clays and 0.7 for sands.
3. Stratigraphy shown above is based on our interpretation of soil strength and may not correspond with the descriptive classifications shown on the bo
4. The lateral load criteria shown above are for use in the computer programs LPILE.
5. The depth to diameter ratio must exceed 4 to use Nc = 9. Otherwise, use Nc = 6.
6. The unit allowable end bearing should not exceed 100 kips per square foot.

ATTACHMENT 'B'
Addendum No. 1

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT
5151 FLYNN PARKWAY, SUITE 306
CORPUS CHRISTI, TEXAS 78411

May 31, 2023

Corpus Christi Regulatory Field Office

SUBJECT: Permit No. SWG-2022-00301; Letter of Permission

City of South Padre
ATTN: Randy Smith
4601 Padre Blvd
South Padre Island, TX 78597

Dear Mr. Smith:

This is in reference to your October 11, 2022 request, submitted on your behalf by LJA Environmental Services LLC, to construct an ADA compliant 6 ft. by 60 ft. wooden attendant dock parallel to the existing bulkhead. The spacing between deck boards will be ½ inch. A total of 18 12-in. timber piles will be installed from land by jetting. The project site is located in a previously dredged and bulkheaded inlet in the Laguna Madre, on South Padre Island, Cameron County, Texas. A copy of your plans in 3 sheets is enclosed.

The dock construction has been authorized by this Letter of Permission (LOP) pursuant to Section 10 of the Rivers and Harbors Act of 1899. All work is to be performed in accordance with the enclosed plans in 2 sheets and the permit conditions. If the authorized work is not completed by December 31, 2028, this authorization expires. The following special conditions have been added to your authorization:

1) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2) When structures or work authorized by this permit are determined by the District Engineer to have become abandoned, obstructive to navigation or cease to be used for the purpose for which they were permitted, such structures or other work must be removed, the area cleared of all obstructions, and written notice given to the Corps of Engineers, Galveston District, Regulatory Division, Corpus Christi Field Office by electronic mail (email) at CESWGRegulatoryInbox@USACE.Army.Mil within 30 days of completion.

3) The permittee must install and maintain, at the permittee's expense, any safety lights, signs and signals required by U.S. Coast Guard, through regulations or otherwise, on the permittee's fixed structures. To receive a U.S. Coast Guard Private Aids to Navigation marking determination, at no later than 30 days prior to installation of any fixed structures in navigable waters and/or prior to installation of any floating private aids to navigation, you are

ATTACHMENT 'C'
Addendum No. 1

required to contact the Eight Coast Guard District (dpw), 500 Poydras St. Suite 1230, New Orleans, LA 70130, (504) 671-2328 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eight Coast Guard District web site at: https://www.atlanticarea.uscg.mil/District-8/District-Divisions/Waterways/PATON/.

If you object to the work authorized or the terms and conditions of this LOP, you may request that the LOP be modified (in accordance with 33 CFR 331.6). To object, you must submit a copy of the completed RFA to the District Engineer (DE) at the letterhead address. Your objections must be received by the DE within **60 days** of the date of this notice, noting the NAP date is considered day 1, or you will forfeit your right to appeal the LOP in the future. It is not necessary to submit an RFA form to this office if you accept the LOP's terms and conditions.

If, after review by the DE, you are still unsatisfied with the LOP because of certain terms and conditions therein, you may appeal under the Corps of Engineers Administrative Appeal Process by completing Section II of the attached RFA form and sending it to the following address:

Mr. Jamie Hyslop
Administrative Appeals Review Officer
Southwestern Division USACE (CESWD-PD-O)
U.S. Army Corps of Engineers
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
Telephone: 469-216-8324
Email: Jamie.r.hyslop@usace.army.mil

This letter does not address nor include any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such. If you have any questions, please contact Amanda Barker by electronic mail (email) amanda.m.barker@USACE.Army.Mil or by telephone at 361-814-5847 ext. 1009. Please notify the Corpus Christi Regulatory Field Office in writing by email at CESWGRegulatoryInbox@USACE.Army.Mil upon completion of the authorized project.

FOR THE DISTRICT COMMANDER:

Kristie A. Wood

Kristie A. Wood
Supervisor
Corpus Christi Regulatory Field Office

cc w/Encls.
Jay Gardner, LJA Environmental Services, LLC, jgardner@lja.com
Eighth Coast Guard District, New Orleans, LA
National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coast & Geodetic Survey, Silver Spring, MD
Texas General Land Office

ATTACHMENT 'C'
Addendum No. 1

Conditions for Letter of Permission:

General Conditions:

1. The time limit for completing the activity authorized ends on **31 December 2028**. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

See Authorization Letter

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

   (X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

   ( ) Section 404 of the Clean Water Act (33 U.S.C. 1344).

   ( ) Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization:

   a. This permit does not obviate the need to obtain other Federal, state or local authorizations required by law.

   b. This permit does not grant property rights or exclusive privileges.

   c. This permit does not authorize any injury to the property or rights of others.

   d. This permit does not authorize interference with any existing or proposed Federal project.

ATTACHMENT 'C'
Addendum No. 1

ATTACHMENT 'C'
Addendum No. 1

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

    a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

    b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

    c. Damages to persons, property or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

    d. Design or construction deficiencies associated with the permitted work.

    e. Damage claims associated with any future modification, suspension or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

    a. You fail to comply with the terms and conditions of this permit.

    b. The information provided by you in support of your permit application proves to have been false, incomplete or inaccurate (See 4 above).

    c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it in appropriate to use the suspension, modification and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of time limit.

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

_____ _____

(TRANSFEREE – Typed/Printed Name) *(DATE)*

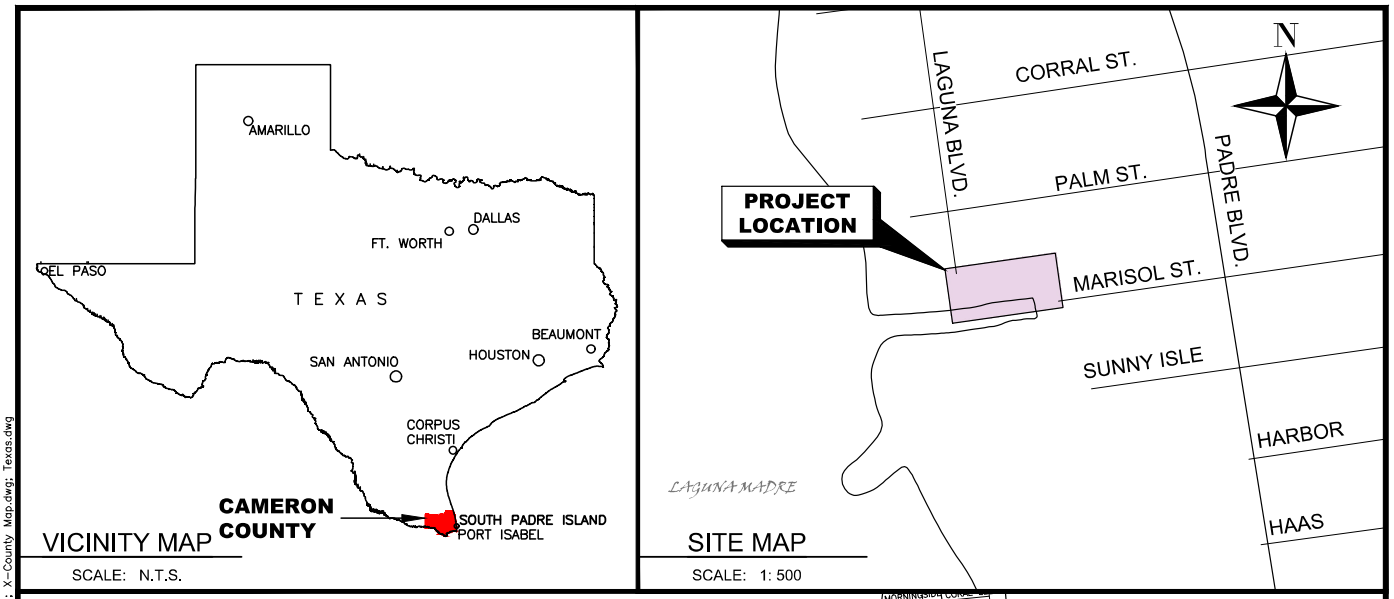
_____ _____

(TRANSFEREE - Signature) *(Mailing Address)*

SWG-2022-00301

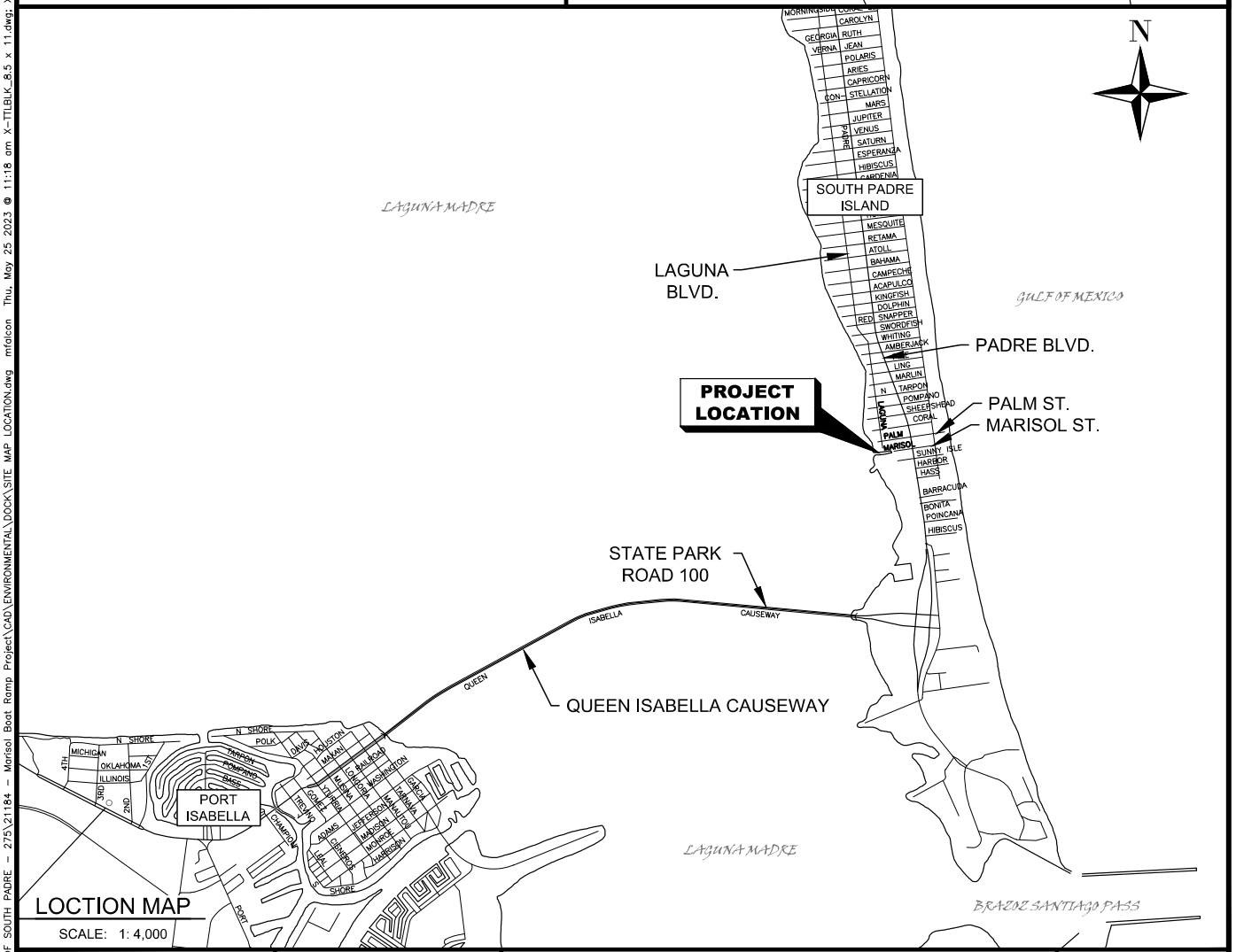
PERMITTED PLANS

ATTACHMENT 'C'
Addendum No. 1



VICINITY MAP
SCALE: N.T.S.

SITE MAP
SCALE: 1: 500



LOCTION MAP
SCALE: 1: 4,000

LJACC NAME: R:\CLIENTS\CITY OF SOUTH PADRE - 275\21184 - Marisol Boat Ramp Project\CAD\ENVIRONMENTAL\DOCK\SITE MAP LOCATION.dwg mfalcon Thu, May 25 2023 @ 11:18 am X-TTLBLK_8.5 x 11.dwg; X-County Map.dwg; Texas.dwg

LJA ENVIRONMENTAL

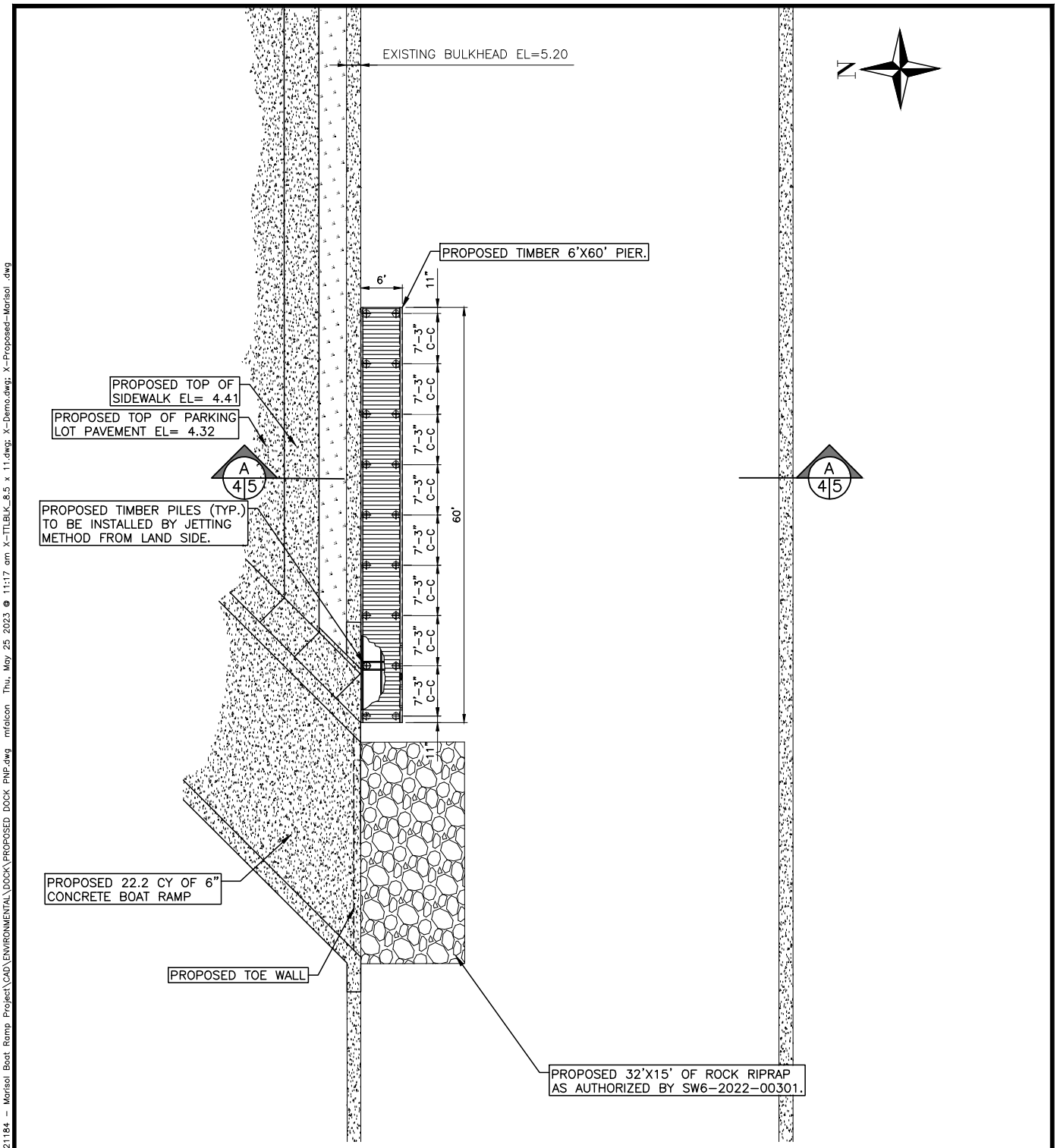
LJA ENGINEERING
TBPE FIRM REG. NO. F-1386

CITY OF SOUTH PADRE ISLAND
MARISOL BOAT RAMP PROJECT

SITE MAP LOCATION

SCALE:	AS NOTED
DRAWN BY:	MF
APPROVED BY:	JG
DATE:	5/25/2023
JOB NO.	C275-21184
SHEET NO.	1

LJA ENGINEERING, Inc. 5350 S. Staples Street, Suite 425, Corpus Christi, Texas 78411 phone: 361.991.8550 fax: 361.887.8855 www.LJA.com



PLAN VIEW

GRAPHIC SCALE (FEET)
20 10 0 20
HORIZONTAL SCALE: 1"=20'

LJA ENVIRONMENTAL

LJA ENGINEERING
TBPE FIRM REG. NO. F-1386

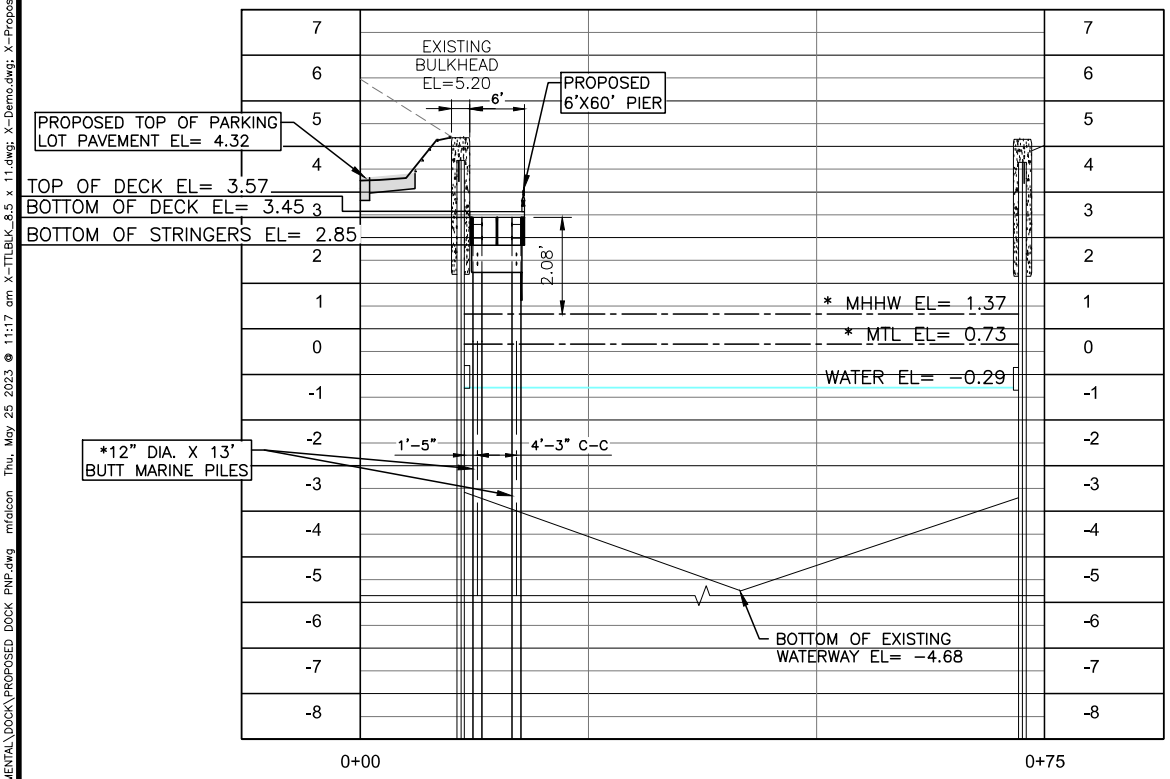
CITY OF SOUTH PADRE ISLAND
MARISOL BOAT RAMP PROJECT

PROPOSED DOCK PLAN VIEW

SCALE:	AS NOTED
DRAWN BY:	MF
APPROVED BY:	JG
DATE:	5/25/2023
JOB NO.	C275-21184
SHEET NO.	4

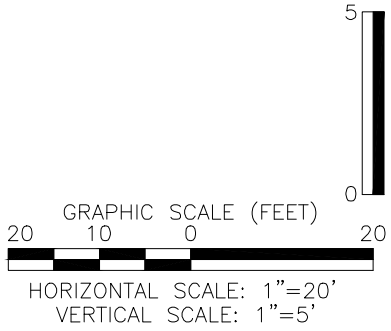
LJACC NAME: R:\CLIENTS\CITY OF SOUTH PADRE - 275\21184 - Marisol Boat Ramp Project\CAD\ENVIRONMENTAL\DOCK\PROPOSED DOCK PNP.dwg mfalcon Thu, May 25 2023 @ 11:17 am X-ITLBLK_8.5 x 11.dwg; X-Demo.dwg; X-Proposed-Marisol .dwg

LJA ENGINEERING, Inc. 5350 S. Staples Street, Suite 425, Corpus Christi, Texas 78411 phone: 361.991.8550 fax: 361.887.8855 www.LJA.com



PROFILE VIEW

A
4|5



LJACC NAME: R:\CLIENTS\CITY OF SOUTH PADRE - 275\21184 - Marisol Boat Ramp Project\CAD\ENVIRONMENTAL\DOCK\PROPOSED DOCK PNP.dwg mfalcon Thu, May 25 2023 @ 11:17 am X-ITLBLK_8.5 x 11.dwg; X-Demo.dwg; X-Proposed-Marisol .dwg

LJA ENVIRONMENTAL

LJA ENGINEERING
TBPE FIRM REG. NO. F-1386

CITY OF SOUTH PADRE ISLAND
MARISOL BOAT RAMP PROJECT

PROPOSED DOCK PROFILE VIEW

SCALE:	AS NOTED
DRAWN BY:	MF
APPROVED BY:	JG
DATE:	5/25/2023
JOB NO.	C275-21184
SHEET NO.	5

LJA ENGINEERING, Inc. 5350 S. Staples Street, Suite 425, Corpus Christi, Texas 78411 phone: 361.991.8550 fax: 361.887.8855 www.LJA.com

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: City of South Padre, Randy Smith		File Number: SWG-2022-00301	Date: 5/31/2023
Attached is:			See Section below
X	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/appeals.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

ATTACHMENT 'C'
Addendum No. 1

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Amanda Barker Regulatory Specialist (CESWG-RDR) U.S. Army Corps of Engineers 5151 Flynn Parkway, Suite 306 Corpus Christi, Texas 78411-4318 361-814-5847 ext. 1009	If you only have questions regarding the appeal process you may also contact: Mr. Jamie Hyslop Administrative Appeals Review Officer Southwestern Division (CESWD-PD-O) U.S. Army Corps of Engineers 1100 Commerce Street, Suite 831 Dallas, Texas 75242-1317 Phone: 469-216-8324 Email: Jamie.r.hyslop@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

ATTACHMENT 'C'
Addendum No. 1